

**City of Greensboro Planning Department
Zoning Staff Report and
Plan Amendment Evaluation
April 10, 2006 Public Hearing**

The information provided in this staff report has been included for the purpose of reviewing proposed zoning changes. Since the zoning process does not require a site plan, there may be additional requirements placed on the property through the Technical Review Committee process to address subdivision and development regulations.

Item: D

Location: North of Greensboro Urban Loop (Interstate 85) between South Elm-Eugene Street and Pleasant Garden Road)

Applicant: Carroll Investment Properties

Owner: Pleasant Garden Properties, LLC; J. Patrick & Dawn M. Short; and Charles E. & Annie P. Humble)

GFLUM

From: Industrial/Corporate Park and Mixed Use Commercial

To: Commercial

Zoning

From: County AG and LI

To: City CD-SC

- Conditions:**
- 1) Uses: All those uses permitted in the SC District.
 - 2) Modifications, if deemed necessary by GDOT or NCDOT, will be made by the developer to the proposed traffic signal at the South Elm-Eugene Street/main access drive intersection to accommodate the proposed development.
 - 3) The property will be developed in accordance with a master development plan which provides for cross-access among all parcels within the property.
 - 4) All exterior lighting, including lighting of the parking areas, shall be directed toward the interior of the property.

SITE INFORMATION	
Maximum Developable Units	N/A
Net Density	N/A
Existing Land Use	Undeveloped
Acreage	115.00
Physical Characteristics	<i>Topography:</i> Gently rolling <i>Vegetation:</i> Wooded <i>Other:</i> N/A
Overlay Districts	SCOD-1
Historic District/Resources	N/A
Generalized Future Land Use	Industrial/Corporate Park and Mixed Use Commercial
Other	N/A

SURROUNDING ZONING AND LAND USE		
Location	Land Use	Zoning
<i>North</i>	Industrial Plant	Co. LI
<i>South</i>	Greensboro Urban Loop	RS-12
<i>East</i>	Ron's Auto Repair / Rural Residential	Co. RS-40 / Co. AG
<i>West</i>	Elmsley Square Shopping Center	CD-SC

ZONING HISTORY		
Case #	Year	Request Summary

DIFFERENCES BETWEEN AG & LI (EXISTING) AND CD-SC (PROPOSED) ZONING DISTRICTS
<p>AG: Primarily intended to accommodate uses of an agricultural nature including farm residences and farm tenant housing. It also accommodates scattered nonfarm residences on large tracts of land. It is not intended for major residential subdivisions.</p> <p>LI: Primarily intended to accommodate limited manufacturing, wholesaling, warehousing, research and development, and related commercial/service activities which in their normal operations have little or no adverse effect upon adjoining properties.</p> <p>CD-SC: Primarily intended to accommodate a wide range of high intensity retail and service developments meeting the shopping needs of the community and the region. The district is established on large sites to provide locations for major developments which contain multiple uses, shared parking and drives, and coordinated signage and landscaping. See Conditions for additional restrictions.</p>

TRANSPORTATION	
Street Classification	S. Elm Eugene Street – Major Thoroughfare, Pleasant Garden Road – Major Thoroughfare.
Site Access	This developer is proposing a new connector road between S. Elm-Eugene Street and Pleasant Garden Road that would have access points along it to provide ingress/egress to the shopping center.
Traffic Counts	S. Elm-Eugene Street ADT = 6,074.
Trip Generation	24 Hour = 36,927, PM Peak Hour = 2,947, Saturday Peak Hour = 6,739.
Sidewalks	Requirement per Development Ordinance. A 6' sidewalk w/ a 4' grass strip is required along both sides of thoroughfares. A 5' sidewalk w/ a 3' grass strip is required along all other streets.
Transit	No.
Traffic Impact Study	Requirement per TIS Ordinance. Please see the Additional Information section of this staff report for the Executive Summary to the TIS.
Street Connectivity	N/A.
Other	N/A.

ENVIRONMENTAL REVIEW	
Water Supply Watershed	No, Site drains to South Buffalo Creek
Floodplains	N/A
Streams	USGS Blue line (perennial) stream requires a 50' buffer (each side of the stream). Buffer is to be measured from top of bank, top of steep slope or edge of wetlands (whichever produces a greater buffer). The restrictions within the buffer are as follows: first 15' must remain undisturbed and next 35' built upon area limit of 50% no occupied structures are allowed. Other perennial streams have not been identified at this time. If perennial, appropriate buffer will be required
Other	Possibility of wetlands on site.

LANDSCAPING REQUIREMENTS	
Location	Required Planting Yard Type and Rate
<i>North</i>	Type D Yard - 5' avg. width; 2 understory/100', 18 shrubs/100'
<i>South</i>	SCOD-1: 50 foot undisturbed buffer Type D Yard - 5' avg. width; 2 understory/100', 18 shrubs/100'
<i>East</i>	Street Yard - 8' avg. width; 2 canopy/100', 4 understory/100', 17shrubs/100' Type D Yard - 5' avg. width; 2 understory/100', 18 shrubs/100'
<i>West</i>	Type D Yard - 5' avg. width; 2 understory/100', 18 shrubs/100'

CONNECTIONS 2025 COMPREHENSIVE PLAN POLICIES

Connections 2025 Written Policies:

POLICY 5F.2: Improve design standards for new development to enhance community appearance and sense of place (visual impacts on adjacent neighborhoods).

Economic Development Goal: Promote a healthy, diversified economy with a strong tax base and opportunities for employment, entrepreneurship and for-profit and non-profit economic development for all segments of the community, including under-served areas such as East Greensboro.

POLICY 7C.1: Ensure that adequate land is zoned and has infrastructure available for the various stages of business development.

POLICY 9A.5: Continue to link City-initiated annexations and approvals of annexation petitions for water/sewer extension policies regarding designated growth areas.

Connections 2025 Map Policies:

The area requested for rezoning lies within the following map classifications:

Activity Center: Activity Centers are existing or anticipated future concentrations of uses that function as destinations or hubs of activity for the surrounding area. Typically located in areas of mixed use shown on the Generalized Future Land Use Map, such centers are intended to include features such as a mix of higher intensity uses (housing, retail, office, etc.), compact development patterns, and pedestrian and transit linkages. A one-half mile radius (considered the limit of a comfortable walk) is shown around each activity center except for the Downtown, which functions as an activity center for the entire City. It should be noted that the locations shown on the Generalized Future Land Use Map are conceptual and do not preclude the development of Activity Centers in other locations where they would support the goals and policies of the Comprehensive Plan.

Existing:

Industrial/Corporate Park: This designation applies to areas where present or anticipated uses include both light and heavy industrial uses, such as manufacturing, assembly, and fabrication; wholesaling and distribution; and corporate office and technology parks, which may be introduced to replace older heavy industrial uses. Although new residential development is discouraged in areas designated for this land use category, pre-existing residential uses may be present in or adjacent to these areas. As established industrial areas redevelop, such residential, institutional, or similar uses should be protected from adverse impacts (heavy truck traffic, significant outside storage, factors such as noise, dust, and glare, etc.) through performance-based standards, buffers, and proper separation from noxious uses.

AND

Mixed Use Commercial: This designation is intended to promote a mix of uses, of which various commercial uses remain predominant, but where residential, service, and other uses are complementary. Where applied to older highway corridors characterized by “strip” commercial uses, the intent is to encourage infill and redevelopment for a more diverse and attractive mix of uses over time. Examples include residential units over commercial uses or a wider array of economically viable uses to replace obsolete uses. Such areas also may represent opportunities for the introduction of substantial higher density and/or mixed-income housing, with negligible impacts on, or resistance from, nearby single-family neighborhoods. Ensuring that buildings are of the appropriate scale and intensity is critical, as is ensuring that sites are

designed in a coordinated, as opposed to a lot-by-lot, manner. New “strip” commercial development is discouraged.

Proposed:

Commercial: This designation applies to large concentrations of commercial uses, such as recently constructed major shopping centers and "big box" retail. Such properties may not be expected to undergo redevelopment or a change in use over the plan horizon, and the immediate areas in which they are located may not be suitable for the introduction of mixed uses. While some new commercial centers are anticipated, in general new retail and commercial service uses will be encouraged within more diversified mixed-use centers rather than as stand-alone shopping centers or expanding highway commercial "strips."

COMPREHENSIVE PLAN AMENDMENT HISTORY		
Case #	Date	Request Summary
N/A		There have not been any map amendments in the immediate vicinity of this case.

APPLICANT STATED REASONS FOR REQUEST

Explain in detail why the change is needed and a justification for such a change:

The subject property is adjacent to land which is presently classified on the GFLUM as Mixed Use Commercial but which is presently zoned CD-SC. It also adjoins the new I-85 by-pass. Further, it is partially located within a potential Activity Center. The subject property is also bounded on the east by Pleasant Garden Road; on the south by I-85 by-pass.

Explain in detail the conditions that you think may warrant a Plan Amendment (i.e. unforeseen circumstances or the emergence of new information, unanticipated changes in development pattern, rezonings, transportation improvements, economic opportunities, changes in socioeconomic conditions, etc.):

The new I-85 by-pass has dramatically changed this area, and its interchange with South Elm-Eugene Street warrants the change in the GFLUM from Industrial/Corporate Park to Commercial. There is presently commercially zoned property on both sides of South Elm-Eugene Street at the interchange. This would be a logical move toward the east where there is a natural boundary in the form of Pleasant Garden Road.

COMPREHENSIVE PLAN ANALYSIS

Need for the Proposed Change:

Policy 7C.1, calls for the City to, “Ensure that adequate land is zoned and has infrastructure available for the various stages of business development.” This request is for a change in land use from Industrial/Corporate Park and a small piece of Mixed Use Commercial to the Commercial land use classification. While commercial development is business development we are continuing to see Industrial land use classifications changing to other non-industrial land use classifications. This site contains approximately 115 acres and is adjacent to an existing industrial use and railroad. It was felt that this could be a good location for additional industrial businesses. However, without access to South Elm-Eugene, access to the Urban Loop is somewhat difficult. Access to the Urban Loop from Pleasant Garden is via Ritters Lake Road or Vandalia Road to South Elm-Eugene Street.

The Plan also states that, "While some new commercial centers are anticipated, in general new retail and commercial service uses will be encouraged within more diversified mixed-use centers rather than as stand-alone shopping centers or expanding highway commercial "strips"."

Staff would like to see conditions added to this application to provide a mix of uses within the commercial proposal and to provide minimum design elements that would make the site attractive and pedestrian friendly. Elements could include: pulling the buildings towards the street with a unified architectural style and articulated facades, providing a median in the new east-west public street, providing pedestrian connections within the site and to the site, and adding amenities such as a pedestrian plaza, street furnishings, street lights, trash receptacles, and landscaping.

Effect of the proposed Change on the Need for City Services and Facilities (e.g. roadway level of service, traffic counts, planned road improvements, transit, accidents statistics, and environmental constraints such as; location within a Water Supply Watershed, floodplain, streams):

Water Resources: Channels that carry public water require a Drainage Maintenance and Utility Easement (DMUE). The width depends on the runoff that the channels carry.

Any wetland disturbance and or stream crossing disturbance must be permitted by the State and the Corps of Engineers. All the approvals must be obtained prior to any disturbance.

Implications, if any, the Amendment may have for Other Parts of the Plan:

If approved as a Commercial land use classification it could encourage other similar requests in the area which could remove other potential industrial sites from the City's inventory.

Unforeseen Circumstances or the Emergence of New Information (e.g. significant economic opportunity in Tier 2 or 3): The development of Elmsley Square.

COMPREHENSIVE PLAN MONITORING COMMENTS

The Monitoring Committee met on Monday, April 3, 2006, and made the following comments concerning this request:

- Worried about losing a significant piece of industrial land (115 acres) especially with FedEx coming. We will have more demand for industrial sites and we are closing one more site for industrial use;
- This could be seen as the provision of service that is called for on the east side. However, this may be too far south to serve the east side; and
- What is the sense of having a by-pass if we are going to clutter it up with commercial uses that will bring the traffic further out and create another "death valley".

CONFORMITY WITH OTHER PLANS

The following aspects of relevant plans may be applicable in this case:

City Plans: This property is located in a Scenic Corridor Overlay District (SCOD-1), which requires a 50 average undisturbed buffer for the portion of the property adjacent to the Greensboro Urban Loop.

Other Plans: N/A

STAFF COMMENTS

Planning:

It appears that there is a drainageway crossing through this site that is depicted on the City's "Drainageway and Open Space" map. If this site is subdivided, the Subdivision Ordinance will require the dedication of those areas to the City of Greensboro as drainageway and open space. The width of the dedication along that drainageway will depend on the size of the pipe it would take to cross said drainageway. If a crossing would require a 66-inch or greater pipe, the required dedication would include the land between the natural one-hundred-year flood contour lines as determined by the City. That area may be reduced in width by filling provided that a minimum average width of two hundred feet is maintained, a minimum width of one hundred feet is maintained at the narrowest point, no fill is placed within a designated floodway, and no slope greater than three to one is created. Article VII, Section 27-22 Stormwater management control requirements, and federal wetlands regulations will prohibit or restrict fill placement in certain locations. If the crossing would require a pipe smaller than 66-inches the minimum average width would be sixty feet.

In terms of mixture of uses, while the original zoning and plan amendment proposal is for commercial, staff feels that the Comprehensive Plan provision and the benefits of having some different uses should entail the **addition of a condition to require that at least 10-20% of the total building square footage for the project be of non-retail and/or smaller scale uses and buildings**. In particular, staff would favor some small-scale personal service establishments, multifamily housing, offices, institutional uses, banks, and hotels.

In terms of general layout, design and walkability, staff has recently been developing guidelines for mixed use and other uses along with the Comprehensive Plan to promote high quality and functional developments. The three key issues are: 1) strong connections, 2) orientation of buildings to the street, and 3) integrated design within the development. Staff would like to see the **addition of a condition that requires that at least 50% of the buildings in the development have a direct orientation to a pedestrian-oriented street or plaza area** in order to promote walkability as well as efficient and safe vehicular movement. This can be accomplished in a number of ways, but focuses on not locating buildings at the back of parking lots, includes safe sidewalk connections to all parts of the development and good attention to detail on design, particularly in architecture, signage, landscaping and lighting.

GDOT: There are several major design issues that will need to be resolved at the plan review stage in order for TRC to give approval of this development. There are back to back reverse curves on both the western end and the eastern end of the proposed collector street that must be designed and constructed to meet minimum engineering roadway design standards. Also, the developer must obtain permission from the NCDOT Rail Division and Norfolk Southern for the proposed railroad crossing on the Pleasant Garden Road end of the connector road.

STAFF RECOMMENDATION

Based on all the information contained in this report, the Planning Department recommends approval of the Comprehensive Plan amendment to the Commercial land use classification and approval of the original zoning to Conditional District – Shopping Center primarily due to:

- Being located along the Urban Loop;
- It is compatible with adjacent commercial development at Elmsley Square; and

- Access to the Urban Loop for the industrial land use classification is limited without direct access to South Elm-Eugene Street.

Staff strongly encourages the addition of the design elements described in the Comprehensive Plan Analysis and Planning Comments sections of this report in order to make this an attractive pedestrian-friendly walkable development, which is supported by Comprehensive Plan Policy 5F.2.

ADDITIONAL INFORMATION

I. Executive Summary

The Britt Way Commons development is proposed to be located just north of the I-85 Bypass between S. Elm-Eugene Street and Pleasant Garden Road in Greensboro, North Carolina. Due to the uncertainty of actual land uses, this study assumes that the worst case scenario for this proposed mixed use development would consist of the following land uses:

➤ 630,000 sf shopping center	➤ 8,000 sf of automobile parts sales
➤ 16 screen movie theatre	➤ 11,000 sf of pharmacy / drug store
➤ 4 position drive in bank	➤ 5,000 sf video rental store

➤ 17,500 sf of fast food restaurant (5 parcels)	➤ 21,000 sf high turnover restaurant (3 parcels)
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The purpose of this report is to evaluate the proposed development in terms of projected traffic conditions, evaluate the ability of the adjacent roadways to accommodate the additional traffic volumes, and to recommend transportation improvements needed to mitigate congestion that may result from the additional site traffic. This report presents trip generation, trip distribution, traffic analyses, and recommendations for transportation improvements needed to meet anticipated traffic demands. This report examines 2005 existing conditions, 2010 no-build conditions, and 2010 build-out conditions for PM peak hour and Saturday operations. In order to study a “worst case scenario”, GDOT indicated that the Saturday Trip Generation Estimates could be added to the PM peak hour traffic volumes to reflect the Saturday operations. Typically, weekday background traffic volumes are much higher than Saturday afternoon traffic volumes. Therefore, since the PM analyses uses actual traffic volumes with the addition of site traffic, this analysis will more closely reflect how the intersections will operate during critical average weekday peak hours. The Saturday analysis included in this report should be used as a tool to estimate the maximum queue lengths at intersections.

According to the Preliminary Conceptual Sketch Plan, the development is proposed to have one (1) right-in/right-out access point just north of the I-85 interchange on S. Elm-Eugene Street and one (1) full movement primary access point on S. Elm-Eugene Street opposite Elmsley Drive. At this location, a connector road is proposed to be constructed that will extend through the development and connect with Pleasant Garden Road opposite Blumenthal Road. Eight (8) driveways will be constructed on the connector road to provide access to the multiple shopping sites and outparcels.

The proposed development is projected to generate approximately 36,927 trips per weekday with 2,947 trips predicted to occur during the afternoon peak hour and 6,739 predicted to occur during the Saturday peak hour.

A summary of the Highway Capacity Software Analysis analyzed using Synchro version 6.0 is shown in the following table:

Britt Way Commons Development Level of Service Summary					
	2005 Existing	2010 No-Build		2010 Build	
Intersection	PM	PM	SAT.	PM	SAT.
Pleasant Garden Rd / Blumenthal Rd	# (0.7) B (10.0) WB	# (0.8) B (10.4) WB	# (0.8) B (10.4) WB	#(N/A) C (22.9)	#(N/A) C (29.9)
Elmsley Dr / S. Elm-Eugene St	B (14.1)	B (17.5)	C (26.7)	D (38.9)	F (119.7)
S. Elm-Eugene St / I-85 EB Ramps	B (11.3)	B (11.7)	B (13.6)	B (19.2)	E (56.9)

S. Elm-Eugene St / I-85 WB Ramps	C (23.1)	C (23.8)	C (24.1)	B (18.6)	E (69.6)
S. Elm-Eugene St / Right-in / Right-out	# (0.5) B (10.4) EB	# (1.2) B (13.0) EB	# (1.2) B (14.5) EB	# (1.6) F (32.6) EB	# (10.6) F (309.8) EB
Internal Site Access #1	N/A	N/A	N/A	# (0.5) B (13.3) SB	# (0.7) C (24.3) SB
Internal Site Access #2	N/A	N/A	N/A	# (478.1) F (*) NBL	# (427.2) F (*) NBL
Internal Site Access #3	N/A	N/A	N/A	# (306.5) F (*) NBL	# (327.9) F (*) NBL
Internal Site Access #4	N/A	N/A	N/A	# (41.8) F (*) NBL	# (353.2) F (*) NBL
Internal Site Access #5	N/A	N/A	N/A	# (24.6) F (544.4) NBL	# (377.2) F (*) NBL
Internal Site Access #6	N/A	N/A	N/A	#(N/A) C (25.0)	#(N/A) E (66.5)
Internal Site Access #7	N/A	N/A	N/A	# (2.0) D (28.6) SBL	# (22.1) F (*) SBL
Internal Site Access #8	N/A	N/A	N/A	# (3.5) E (41.3) NBL	# (430.3) F (*) NBL

- Unsignalized Intersection: No letter value assigned by Synchro, only overall intersection delay

* Delay exceeds reasonable limits as calculated by Synchro

N/A : unsignalized intersection not applicable for this scenario due to the necessity of dual left turns

Recommended Improvements

This study shows that the proposed development will increase traffic on roadways and intersections in the vicinity of the development. Based on the analysis performed, on-site observations of existing traffic conditions, and the GDOT turn lane warrants, the following improvements are recommended to be evaluated with the development of the site plan:

Pleasant Garden Road/ Blumenthal Road

- Construct dual northbound left turn lanes with a minimum of 300 feet of full width storage
- Construct an exclusive southbound right turn lane with a minimum of 200 feet of full width storage
- Construct dual eastbound left turn lanes exiting the proposed development
- Construct a shared eastbound through/right turn lane exiting the proposed development
- Provide a signal at this location to accommodate the dual left turning movement

Elmsley Drive/ S. Elm-Eugene Street

- Restripe existing median to provide dual southbound left turn lanes with the maximum storage practicable with the existing roadway configuration
- Extend the exclusive northbound right turn lane storage extending to the existing right-in-right-out intersection
- Restripe northbound through and shared through-right turn lane
- Construct dual westbound left turn lanes with a minimum of 600 feet of full width storage.
- Construct a shared westbound through-right turn lane
- Restripe the eastbound approach to provide a through lane

S. Elm-Eugene Street/ I-85 EB and WB Ramps

- Modify signal timing to accommodate the development traffic.

Elmsley Drive Extension

- Extend Elmsley Drive from S. Elm-Eugene Street to Pleasant Garden Road through the proposed development. This roadway will need to meet or exceed minimum GDOT design requirements for a minor thoroughfare (or as directed by GDOT). This facility is recommended to be a 4-lane median divided section with appropriate auxiliary turn lanes as identified for the internal site access points.

Internal Site Access #1

- Construct Internal Site Access #1 as a right-in / right-out T intersection
- Construct Internal Site Access #1 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications

Internal Site Access #2

- Construct Internal Site Access #2 as a full movement intersection
- Provide an exclusive eastbound left turn lane with a minimum of 100 feet of full width storage
- Provide an exclusive westbound left turn lane with a minimum of 150 feet of full width storage
- Provide separate northbound and southbound left and through-right turn lanes exiting the proposed development.
- Construct Internal Site Access #2 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications

Internal Site Access #3

- Construct Internal Site Access #3 as a full movement intersection
- Provide an exclusive eastbound left turn lane with a minimum of 100 feet of full width storage
- Provide an exclusive westbound left turn lane with a minimum of 75 feet of full width storage
- Provide separate northbound and southbound left and through-right turn lanes exiting the proposed development.
- Construct Internal Site Access #3 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications, including specification for stem length

Internal Site Access #4

- Construct Internal Site Access #4 as a full movement intersection
- Provide an exclusive eastbound left turn lane with a minimum of 150 feet of full width storage
- Provide an exclusive westbound left turn lane with a minimum of 50 feet of full width storage
- Provide separate northbound and southbound left and through-right turn lanes exiting the proposed development.
- Construct Internal Site Access #4 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications

Internal Site Access #5

- Construct Internal Site Access #5 as a full movement intersection
- Provide an exclusive eastbound left turn lane with a minimum of 100 feet of full width storage
- Provide an exclusive westbound left turn lane with a minimum of 50 feet of full width storage
- Provide separate northbound and southbound left and through-right turn lanes exiting the proposed development.
- Construct Internal Site Access #5 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications

Internal Site Access #6

- Construct Internal Site Access #6 as a full movement intersection
- Provide dual exclusive eastbound left turn lanes with a minimum of 245 feet of full width storage
- Provide an exclusive westbound left turn lane with a minimum of 100 feet of full width storage
- Provide an exclusive westbound right turn lane with a minimum of 350 feet of full width storage to allow the right turning vehicles to bypass the expected westbound queues on the Elmsley Drive Extension
- Provide separate northbound and southbound left and through-right turn lanes exiting the proposed development
- Construct Internal Site Access #6 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications
- Install a traffic signal to accommodate the dual left turning movements

Internal Site Access #7

- Construct Internal Site Access #7 as a full movement intersection
- Provide an exclusive eastbound left turn lane with a minimum of 50 feet of full width storage
- Provide separate southbound left and through-right turn lanes exiting the proposed development.
- Construct Internal Site Access #7 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications

Internal Site Access #8

- Construct Internal Site Access #8 as a full movement intersection
- Provide an exclusive eastbound left turn lane with a minimum of 50 feet of full width storage
- Provide an exclusive eastbound right turn lane with a minimum of 100 feet of full width storage to decrease interaction with the queues from the Pleasant Garden Road intersection
- Provide an exclusive westbound left turn lane extending to the Pleasant Garden Road intersection.
- Provide an exclusive westbound right turn lane with a minimum of 75 feet of full width storage to facilitate the smooth flow of vehicles entering the development from Pleasant Garden Road.
- Provide separate northbound and southbound left and through-right turn lanes exiting the proposed development.
- Construct Internal Site Access #8 to meet or exceed all applicable City of Greensboro and/or NCDOT specifications

In addition to the geometric improvements proposed above, the developer should have close coordination with the Southern Railroad to ensure that a safe railroad crossing is provided. According to Jason Orthner of the NCDOT Rail Division, there are currently 6 trains per day traversing this area. Actual crossing times will be provided in the final report. With the construction of dual eastbound left turn lanes, the 95th percentile queues for the eastbound movement are not expected to exceed 176 feet in the Saturday peak hour. Care should be taken via implementation of appropriate signage, signal design, and railroad crossing construction (four-quadrant gates, warning gates, and preemption) to ensure that vehicles do not queue over the proposed at-grade railroad crossing.

To alleviate some of the queues and delays found along S. Elm-Eugene Street and the Elmsley Drive Extension, the proposed development should encourage motorists to utilize the right-in-right-out access on S. Elm-Eugene Street as well as the secondary access at Pleasant Garden Road. The proposed development should also encourage trip chaining and internal capture through the provision of a pedestrian friendly environment and possibly internal shuttle services.

Conclusions

This study shows that the proposed development will increase traffic on study area roadways and intersections. Improvements will need to be constructed in order to mitigate the additional traffic generated by the proposed development. The proposed traffic improvements will mitigate the projected additional traffic in this area, although the minor side street movements at the internal access points will be congested. It is common for delays to be experienced on side streets from parking lots or driveways that intersect roadways access major shopping centers. Additionally, the Elmsley Drive / South Elm-Eugene Street and I-85 ramp intersections will experience additional delay in the Saturday peak hour, even with the proposed roadway modifications. The results of the analyses indicate that with the noted improvements, most of the intersections are projected to operate at acceptable levels of service in the PM peak hour. The proposed development should not materially endanger public safety.